

## CLAIMS

- 1.- A convergence system (100) for a projection display system, comprising a light splitting and/or light recombining means (102), a number of spatial light modulating means (106), and for each modulating means (106) an intermediate part (104) to connect said modulating means (106) to a side of said light splitting and/or light recombining means (102), whereby each of said intermediate parts has an average expansion characteristic depending upon environmental influences which is similar to the average expansion characteristics depending upon environmental influences of at least one of the light splitting and/or recombining means (102) and the light modulating means (106).
- 2.- A convergence system (100) according to claim 1, wherein said convergence system has a color misconvergence drift due to said environmental influences which is less than 10 micrometer, preferably less than 5 micrometer, more preferably less than 1 micrometer.
- 3.- A convergence system (100) according to claim 1, wherein said environmental influences are at least one of temperature, temperature gradient, humidity, stress and strain.
- 4.- A convergence system (100) according to claim 1, wherein said intermediate parts (104) have an average linear thermal expansion coefficient which deviates less than  $3 \cdot 10^{-6}/K$ , preferably less than  $2 \cdot 10^{-6}$ , most preferably  $1 \cdot 10^{-6}$  of at least one of the average linear thermal expansion coefficient of the light splitting and/or light recombining means (102) or the average linear thermal expansion coefficient of the light modulating means (106).
- 5.- A convergence system (100) according to claim 1, wherein said intermediate parts have a specific thermal conductivity which differs less than 100%, preferably less than 50%, more preferably less than 25% of at least one of the specific thermal conductivity of the light splitting and/or light recombining means (102) or the specific thermal conductivity of the light modulating means (106).

- 6.- A convergence system (100) according to claim 1, wherein said intermediate parts have a high coefficient of elasticity.
- 7.- A convergence system (100) according to claim 6 wherein said high coefficient of elasticity corresponds to a Young's modulus of at least 50 GPa, preferably at least 140Gpa, more preferably at least 300Gpa.
- 8.- A convergence system (100) according to claim 1, wherein said intermediate parts are at least partly constructed of ceramics.
- 9.- A convergence system (100) according to claim 8, wherein at least partly means at least 50%, preferably at least 80%, most preferably at least 100% constructed of ceramics.
- 10.- A convergence system (100) according to claim 8 wherein said ceramic is  $\text{Al}_2\text{O}_3$ .
- 11.- A convergence system (100) according to claim 1, wherein each of the intermediate parts (104) furthermore comprises straight, stiff bridges to connect the light splitting and/or light recombining means (102) with the spatial light modulating means (106).
- 12.- A convergence system (100) according to claim 1, wherein each of the intermediate parts (104) is adjusted for sideways receipt of analyzer means.
- 13.- A convergence system (100) according to claim 1, wherein the convergence system (100) has six degrees of freedom for converging the different parts of the convergence system.
- 14.- A convergence system (100) according to claim 1, furthermore comprising connecting means to connect the intermediate parts (104) with the light splitting and/or light recombining means (102) and to connect the intermediate parts (104) with the spatial light modulating means (106).
- 15.- A convergence system (100) according to claim 1, wherein the light splitting and/or light recombining means (102) are an X-cube dichroic prism.
- 16.- A convergence system (100) according to claim 1, the light splitting and/or light recombining means (102) furthermore being adjusted to receive a light subbeam image from each set of spatial light modulating

- means (106) and intermediate parts (104) to form a converged image on a screen, the light splitting and/or light recombining means (102) mirroring at least one of said light subbeam images, wherein at least one intermediate part has an asymmetric shape with respect to a direction perpendicular to an optical axis through the at least one intermediate part, and convergence of the subbeams after the light splitting and/or light recombining means before projection of the converged image on the screen is independent of perturbations in one or more environmental factors which affect the dimensions of the intermediate parts.
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- 17.- A convergence system (100) according to claim 16, wherein the intermediate parts (104) have an asymmetrical shape and whereby some intermediate parts (104) are adjusted to have a mirrored asymmetrical shape compared to other intermediate parts (104), to provide isotropic
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- misconvergence for each set of light modulating means (106) and intermediate parts (104).
- 18.- A convergence system (100) according to claim 17, the light splitting and/or light recombining means adjusted to receive a light subbeam from each set of spatial light modulating means (106) and intermediate parts
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- (104), wherein said some intermediate parts (104) are either all the intermediate parts sending a light subbeam to the light splitting and/or light recombining means that are subsequently mirrored an odd number of times by the light splitting and/or recombining means or all the intermediate parts sending a light subbeam to the light splitting and/or
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- light recombining means that are subsequently not mirrored or mirrored an even number of times.
- 19.- A convergence system (100) according to claim 1, wherein the convergence system furthermore is provided with a handling and guiding means.
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- 20.- A projection display system comprising a convergence system according to claim 1.